From: Kessler, Katrina (MPCA)
To: Pfeifer, David
Cc: Kessler, Katrina (MPCA)
Subject: RE: answers to questions
Date: Monday, October 06, 2014 2:31:37 PM

Let me know if this doesn't work.

From: Pfeifer, David [mailto:pfeifer.david@epa.gov]
Sent: Monday, October 06, 2014 2:14 PM
To: Kessler, Katrina (MPCA)
Subject: RE: answers to questions

Thanks!

The map didn't come through, is it somewhere in the MN monitoring strategy? I have the strategy if you can aim me to the correct page.

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USEPA Region 5
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From: Kessler, Katrina (MPCA) [mailto:katrina.kessler@state.mn.us]
Sent: Monday, October 06, 2014 1:56 PM
To: Pfeifer, David
Subject: answers to questions

How many total river and stream sites are sampled each year?

Caveat is that these are sampled for condition monitoring – not problem investigation/stressor ID/effectiveness:

Biology (1x chemistry – NO2+NO3, TP, TSS, NH4, Secchi Tube, and instantaneous DO, pH, Temp, and Conductivity) = ~450 sites

Biology plus comprehensive chemistry (10x) = ~100

Load monitoring (chemistry and flow) = ~200

Total: ~750 sites

How many total river and stream sites are sampled each year for TP and Chl-a. Any for TP, Chl-a and one of the other response variables?

TP and chl-a

Large River - ~20 stations per year

10X - ~15% per year – 15 stations

Total: ~35 stations

TP, chl-a, and other response variables

Large River - ~20 stations per year (BOD – not at a quantity sufficient to assess – monthly samples for one year only) – instantaneous pH and DO only.

10X - ~15% per year – 15 stations – instantaneous pH and DO. May have 2 weeks of deployed sonde data on a subset of these (less than 5).

Total: ~35 stations

How do the bio and chemistry sampling locations relate to one another?

See map (example is the HUC-8 Lac Qui Parle Watershed). Nested samples – the biology (1x chemistry) sites are located at the HUC-14 scale (red dots). The biology plus comprehensive chemistry (10x) stations occur at the aggregated HUC-12 scale (green dots) and include the pour point of the watershed (yellow dot). For large rivers (mainstems), the 10x stations are instead at the outlet of the HUC-10.

How to the pour points relate to the 10x sites?

See map. HUC8 Pour points have a biology and 10x chemistry station collocated (yellow). Many of them also have a load monitoring station (additional TP, but not chl-a). Aggregated HUC-12 scale pour points have the 10x chemistry and bio (green), and the HUC14 pour points have bio and one time chemistry (red). Yellow and green locations in a watershed would have water chemistry collected at a sufficient frequency to allow for assessments, the red stations would only support a biological assessment only.

How do we plan to use the 10x and pour point data to make NPDES decisions?

Data from 10x and pour point sides will be used to characterize the condition of the river. Discharge from point sources upstream of these sites will be evaluated for the reasonable potential to cause or contribute to an exceedance of the applicable eutrophication standard at each respective site. Where reasonable potential is found, more restrictive limits will be developed.

10x and pour point data will also be used to calibrate computer watershed hydrology models which will then be used to simulate current conditions and calculate the reductions necessary to meet standards, eutrophication and otherwise. These models (HSPF) are important because they are able to simulate the complex and interconnected nature of multiple water quality parameters and processes. Scenarios will better inform limit decisions and TMDLs when available.

Generally speaking, the question is not *whether* a facility will have the reasonable potential, but rather, *where* this reasonable potential may first occur. After establishing limits on the basis of water quality at a 10x or pour point site, limit review scientists will examine water quality farther downstream to determine whether limits set on the basis of near-field data are sufficiently restrictive for downstream, far-field waters.

Do we have SONDES deployed at all pour point locations? If so, it is safe to assume that we are collecting DO flux and pH continuously at all those locations?

No – our pour point locations have a flow station that runs at 15 minute intervals, but it does not also collect sonde data. We will not have DO flux or pH continuously at these locations. We will only have instantaneous grabs at the time of water chemistry collection.

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